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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,574	04/22/2004	Mani Sundaram	20030126-CIP	6714
42716	7590	11/07/2005	EXAMINER	
MAINE & ASMUS P. O. BOX 3445 NASHUA, NH 03061			JACKSON JR, JEROME	
			ART UNIT	PAPER NUMBER
			2815	

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. <span style="float: right;">✓</span> 10/829,574	Applicant(s) SUNDARAM ET AL.	
	Examiner Jerome Jackson Jr.	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/19/04</u> . | 6) <input type="checkbox"/> Other: ____  |

The information disclosure statement filed 7/19/04 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because 1. The citation of PCT/US00/35762 has not been submitted and there appears to be no such PCT. 2. The citations on sheet 4 do not have dates and proper citations. 3. The WO 98/09441 citation on sheet 1 has not been submitted. 4. The citations uninitialed on sheet 3 have not been submitted. 5. The Vaya '04 article appears to be a year 2000 article rather than a 2004 article. Clarification is required. The IDS has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin '358 in view of Kuan '917.

Martin teaches all the structure claimed including gratings and "photon in a box" design (column 8 lines 1-30), except that he does not specifically teach asymmetric quantum well detector layers. This difference is not patentable, however, because it was known from Kuan to practice asymmetric quantum well structure to detect a multispectrum, and it would have been prima facie obvious to have practiced such design with gratings and "photon in a box" design in order to tunably detect a multispectrum. See figures 6 and 10 of Kuan for asymmetric well design. Claim 1 is obvious structure. Claim 2 is obvious as similar thicknesses are used in both Martin and Kuan for detector layers. Claims 3-5 are rejected as Martin teaches similar ROIC circuitry for biasing. Claims 6-10 are rejected as Kuan shows in figure 10 a bottom superlattice comprising quantum wells separated by a barrier from a top superlattice comprising quantum wells of different dimension. In regard to claim 8 note that the 6nm Al<sub>0.31</sub>Ga<sub>0.69</sub>As barriers in the top superlattice comprise well "spikes". Claims 9 and 10 are rejected as the applied art functions in the same manner. Claims 11-20 are similar to claims 1-10 and are likewise rejected.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin '358 in view of Almogy et al.

Martin shows gratings and "photon in a box" design with ROIC circuitry, etc. The only difference from applicant's claims is the "asymmetric" well design. This difference is not patentable because Almogy suggests such asymmetric design for efficient modulation.

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Particularly in regard to claims reciting a well spike, note that Almogy teaches a well spike of doped material. Applicant's claims are obvious structure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 571-272-1730.

The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 571-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

jj

  
JEROME JACKSON  
PRIMARY EXAMINER